International Conference

"The use of modern information technologies in botanical investigations"

Apatity, Murmansk Province

March, 28-31, 2017

http://kpabg.ru/node/468

APATITY · 2017

IRIDACEAE Juss. – ИРИСОВЫЕ
NEOMARICA NORTHIANA Sprague
НЕОМАРИКА НОРТОНА
Гранадос

ЧАЙНЫЕ
CAMELLIA JAPONICA L.
КАМЕЛИЯ ЯПОНСКАЯ
Влажные субтропики Японии,
южная часть п-ва Корея,

Organizers

- **Kola Science Center** (http://www.kolasc.net.ru/)
- **Polar-Alpine Botanical Garden-Institute**
- **Institute of North Industrial Ecology Problems,**
- Murmansk branch of the Russian Botanical Society

RAS = '**R**ussian **A**cademy of **S**ciences'

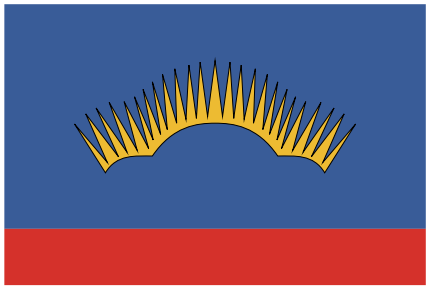
The presentations are now available from conference

http://kpabg.ru/node/474

All slides were in English!

All abstracts are published here :

http://kpabg.ru/sites/default/files/bisconf2017abstracts24032017.pdf



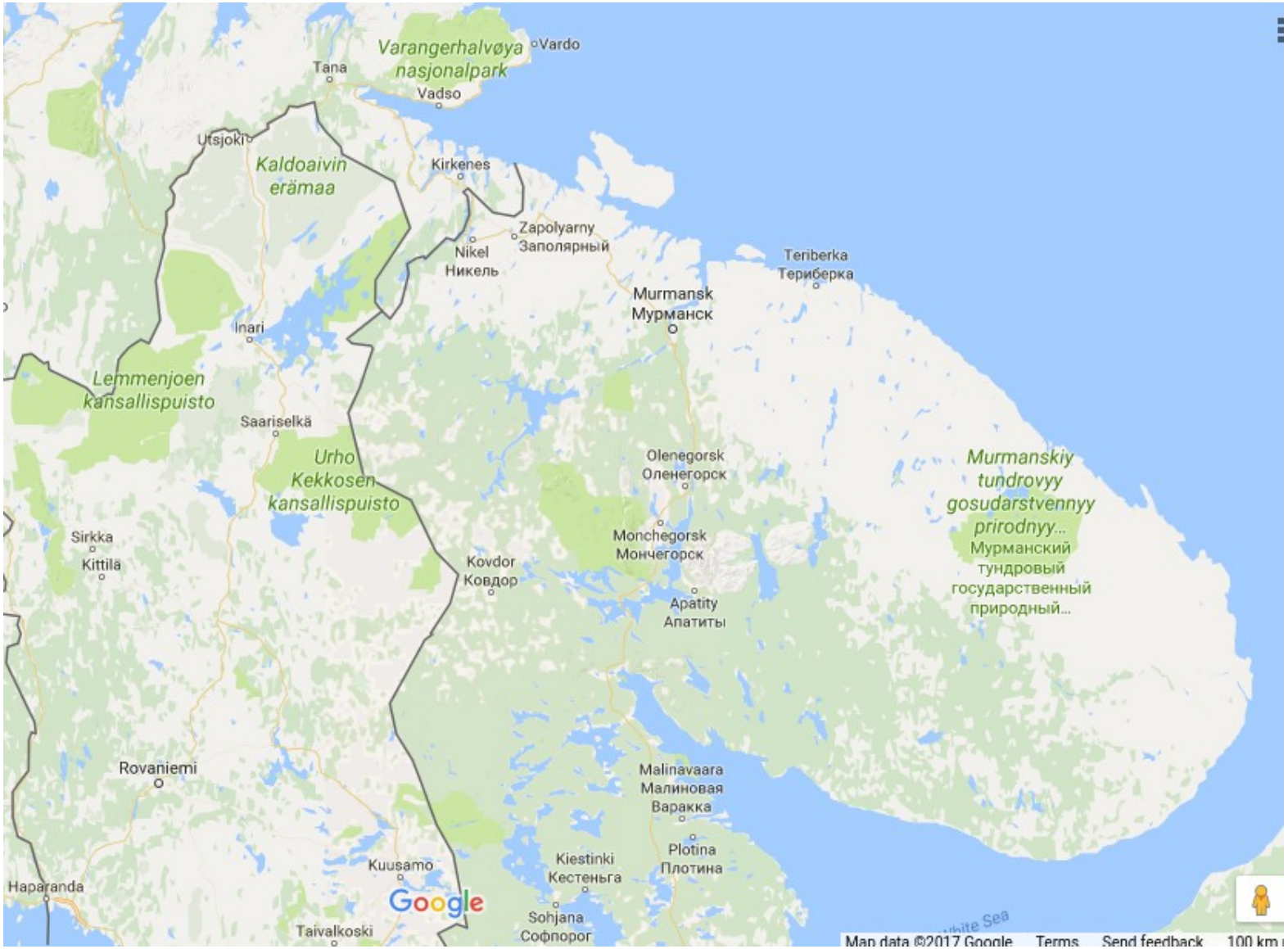
Murmansk Oblast

Мýрманская óбласть

Zones

Figure 18. Extent of Forest Fund Areas by Forest Zones and Sub Zones

Kola peninsula ++



Lake Imandra & Khibiny Mountains

Апатиты

Apatity

Town in Russia

Apatity is a town in Murmansk Oblast, Russia, located along the Murman Railway between Lake Imandra and the Khibiny Mountains, 23 km west of Kirovsk and 185 km south of Murmansk, the administrative center of the oblast. Wikipedia

How to reach Apatity ?

By flight

(1)

Flight : **Stockholm**-Moscow

Flight : Moscow-Murmansk

Flight+Train

(1)

Flight : **Stockholm**-Moscow

Train :

Moscow-Murmansk (30h)

(2)

Flight: Stockholm-S:t Petersburg

Train:

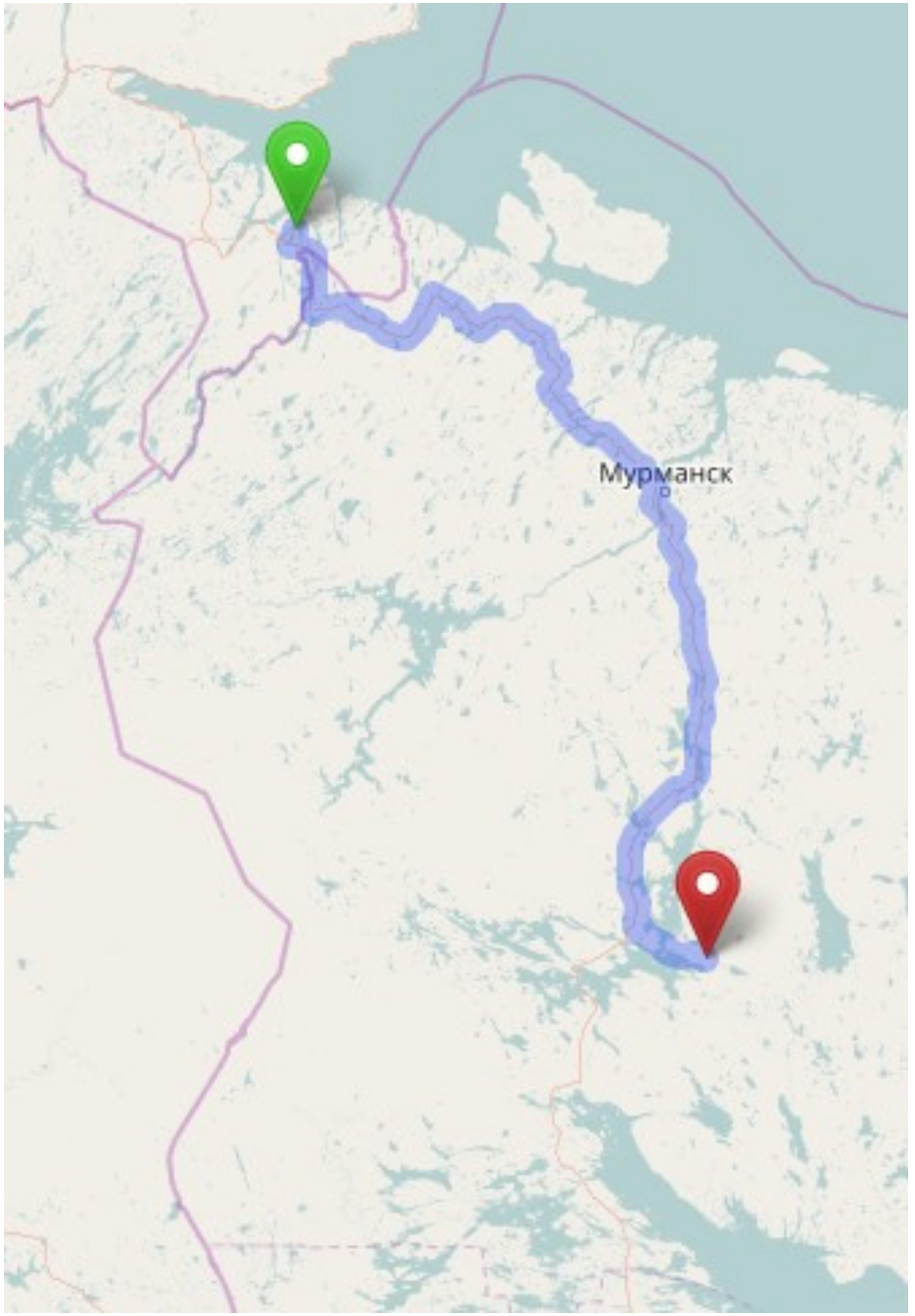
S:t Petersburg-Murmansk (24h)

Car from Joensuu/Finland ?
Distance: 876km. Time: 12:16.

Source:http://www.openstreetmap.org

Car from Kirkenes/Norway ?
Distance: 403km. Time: 5:53.

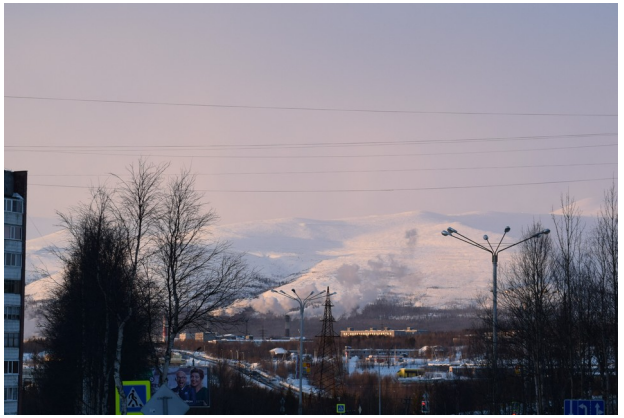
Source:http://www.openstreetmap.org



Апатиты

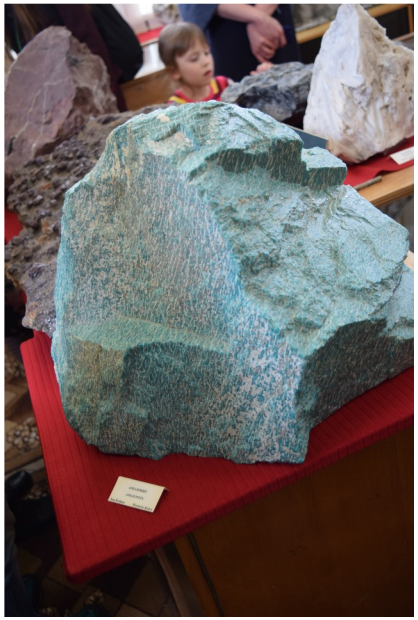
1941
1945

GBIF
BioCASe
JACQ
Russian
Cryptogamic Russian Informa
National Depository Bank of
"Noah's Ark"



ПЕЧЕНГА

АЛЛОФАН
Allophane
Khibiny



ТИУ 1089
ЛЕПИДОЛИТ
Lepidolite
Воронья тундра Voronya Tundra

Presentations
4 day conference

- 28 March, Tuesday
  - Registration + Opening the conference + Plenary 'The technical and legal issues ,data export and import, validation of data, sustainable systems development'
- 29 March, Wednesday
  - **Section 'Information Systems and Databases'**
- 30 March, Thursday
  - **Section 'Modern information technologies in the data processing'**
- 31 March, Friday
  - **Section 'The use of remote sensing methods in the vegetation mapping and biodiversity studies'**
  - Excursion to the Polar-Alpine Botanical Garden and the snow village

Tuesday (28th of March)

CLOUD ENVIRONMENT FOR SCIENTIFIC RESEARCHES	Fedorov Roman, Verhozina A.V. , Bychkov I.V. , Ruzhnikov G.M., Shumilov A.S.
CONCEPT OF THE STRUCTURE AND CONTENT OF THE NORTH PLANTS SPECTRAL SIGNATURES LIBRARY	Zimin Michael, Tutubalina O.V., Golubeva E.I., Rees W.G.
DATA BASE «RUSSIAN MOSS FLORA»	Ignatov Michael, Kolesnikova M.A., Ivanov O.V., Kozhin M.N., Dudov S.V., Pisarenko O.Yu.
DEVELOPMENT OF THE INFORMATION - ANALYTICAL SYSTEM ON THE PHYTODIVERSITY OF BAIKAL SIBERIA	Verkhozina Alla, Fedorov R.K.
EXPERIENCE IN THE USE OF COMPUTER INFORMATION SYSTEMS IN THE COMPILING OF DISTRIBUTION MAPS OF SPECIES	Konstantinova Nadezhda, Savchenko A.N.
GLOBAL BIODIVERSITY DATA FOR SCIENCE AND POLICY – THE GBIF PERSPECTIVE	Schigel Dmitry
METHOD OF BASE VECTORS AND OTHER POSSIBILITIES TO RECOGNIZE AND ANALYSE THE CELL ULAR NETWORK OF MOSSES	Ivanov Oleg, Pjatnitskij A.M., Kolesnikova M.A., Ignatov M.S.
ON THE INDEX OF DIVERSITY (INFORMATION) – SHANNON INDEX	Voytekhovsky Yuriy
POSSIBILITIES OF CRYPTOGAMIC RUSSIAN INFORMATION SYSTEM	Davydov Denis, A.Melekhin, N.Konstantinova, E.Borovichev
REPRESENTATION OF FOREST DIVERSITY AND DYNAMICS IN THE DATABASE "HABITATS OF EASTERN FENNOSCANDIA"	Kryshen Alexander, Genikova N.V.

Wednesday (29th of March)

A FAUNISTIC DATABASE «THE BIRDS OF NORTHERN EURASIA»	Morkovin Anton, Kalyakin M.V., Voltzit O.V.
CREATION OF THE DATA BASE ON DIATOMS OF EURO-ARCTIC REGION	Denisov Dmitry , Kosova A.L.
CREATION OF THE HERBARIUM DATABASE OF PETROZAVODSK STATE UNIVERSITY (PZV) : GEOGRAPHICAL IDENTIFICATION OF SAMPLES	Ilina Olga
CRIS AS A WORKING MODEL OF THE INTERREGIONAL INFORMATION SYSTEM FOR CRYPTOGAMIC BOTANISTS	Melekhin A lexey
DIGITIZATION OF THE MOSCOW UNIVERSITY HERBARIUM (MW)	Seregin Alexey
DINA COLLECTION MANAGER FOR NATURAL HISTORY MUSEUM IN THE MAKING AND THE SEQDB - MODULE	Erlingsson Ingimar
FUNGARIUM OF YUGRA STATE UNIVERSITY AND ITS DATABASE	Filippova Nina , Bulyonkova T.M., Karpov D.V., Lapshina E.D.
GOOGLE SPREADSHEETS AS A BASIC TOOL FOR THE MANAGEMENT OF BIODIVERSITY DATA	Bolshakov Sergey, Filippova N.V., Potapov K.O., Ageev D.V., Volobuev S.V.
IS “OCCURRENCES OF INVASION PLANT SPECIES”: EXPERIENCE OF DATA COLLECTION ON THE DISTRIBUTION OF HERACLEUM SOSNOWSKYI AND PUBLISHING IN GBIF	Chadin Ivan , Dalke I.V., Zakhozhiy I.G., Malyshev R.V., Madi E.G., Kuzivanova O.A., Kirillov D.V., Elsakov V.V.
INDUSTRIAL METHODS FOR LARGE SCALE DIGITIZATION OF BIOLOGICAL COLLECTIONS IN FINLAND	Fetyukova Yulia , Tegelberg R., Karppinen J., Mononen T., Wu Z., Saarenmaa H.
INTERACTIVE MAP AND DATABASE OF KARELIAN BIRCH GENETIC RESERVE	Nikolaeva Nadezhda , Vorobiev V.V.
RUSSIAN DATA IN THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF)	Shashkov Maxim , Ivanova N.V.
STUDY OF THE CYANOPROKARYOTES DIVERSITY OF POLAR DESERTS OF THE NORTHERN HEMISPHERE BASED ON INFORMATION SYSTEM CRIS	Davydov Denis
THE INFORMATION SYSTEM ON DISTRIBUTION OF PROTECTED LICHEN LOBAIA PULMONARIA BASED ON GBIF DATA STANDARDS	Ivanova Natalya , Shashkov M.P.

Thursday (30th of March)

EXCELTOR, THE MODULE FOR SEMI-AUTOMATIC ANALYSIS OF GEOBOTANICAL DATA BASED ON THE EXCEL AND THE STATISTICAL PACKAGE R	Novakovsky Alexander
INFORMATION TECHNOLOGIES IN SUPPORT OF ECOLOGICAL SECURITY MANAGEMENT IN MURMANSK REGION	Masloboev Andrey
MODELING OF DISTRIBUTION OF NEPHROMOPSIS LAURERI USING BIOCLIMATIC DATA	Tagirdzhanova Gulnara, Dyomina A.V.
STUDY OF PHYTOGEOGRAPHYCAL BOUNDARIES IN RUSSIAN AMUR BASIN BY MEANS OF MODELLING OF VASCULAR PLANTS DISTRIBUTION	Dudov Sergey, Dudova K.V., Gamova N.S.
THE STUDY OF SOIL TEMPERATURE IN KHIBINY MOUNTAINS USING THE AUTOMATIC THERMO-SENSORS	Shtabrovskaya Irina, Zenkova I.V.
THE USING OF WATER LEVEL DATA LOGGERS IN FORESTED MIRES AND BUILDING UP A SIMPLE SIMULATION	Kutenkov Stanislav
USE OF THE INDEX OF SPECIES SPECIALIZATIONS IN GEOBOTANICAL AND FLORISTIC STUDIES	Kushnevskaya Elena, Borovichev E.A., Shorohova E.V.

Thursday/Friday (30th + 31th of March)

CREATION OF GIS FOR STUDIY OF MEDICINAL PLANTS RESOURCES ON THE BASIS OF INTERPRETATION OF AERIAL IMAGES FROM UAVS	Fadeev Nikolay, Skrypitsyna T.N., Kurkov V.M., Zamyatina E.O.
METHODOLOGICAL APPROACHES TO PHYTOGEOGRAPHICAL ANALYSIS OF THE CRYOPHYTE POLSTER COMMUNITIES IN THE MONGOLIAN ALTAI	Bocharnikov Maxim
OPEN SOURCE OF REMOTE SENSING DATA FOR STUDY OF DISTRIBUTION AND COMPOSITION OF CONIFER OUS FORESTS IN NORTH - WEST CAUCASUS	Komarova Anna
QUANTITATIVE ESTIMATION OF THE SPECIES DISTRIBUTION RANGE BASED ON THE GEOSTATISTICAL TECHNIQUES (WITH REPRESENTATIVES OF SPHAGNUM MOSSES AS A CASE STUDY)	Popov Sergey
STUDY OF PLANT SPECIES ALTITUDINAL DISTRIBUTION USING GEOSPATIAL METHODS (IN ANABAR AND PUTORANA PLATEAUS AS AN EXAMPLE)	Pospelov Igor
THE ANALYSIS OF THE COMPOSITION AND STATE OF PL ANT COMMUNITIES, LOCATED IN WATER PROTECTION ZONES OF RIVERS IN THE NOTHERN PART OF NENETS AUTONOMOUS DISTRICT, WITH USE OF SATELLITE DATA	Kozlova Marya, Tursunova G.Sh.
THE DIGITAL MAPS OF SPATIAL STRUCTURE OF MIRES IN THE NATIONAL PARK "VODLOZERSKY"	Antipin Vladimir
THE FLOODPLAIN VEGETATION MAPPING AT DIFFERENT SCALES (NORTHERN D VINA AND PINEGA RIVERS, ARKHANGEL'SK PROVINCE)	Makarova Marina
TO THE DATA U NIFICATION FOR JOINT OR PUBLIC PROJECTS	Petrova Olga, Petrov V.N.
USING QUANTUM GIS FOR URBAN VEGETATION CERTIFICATION (UST - KINELSKY TOWN, SAMARA REGION AS AN EXAMPLE)	Korchikov Eugene
VEGETATION MAPPING ON THE BASE OF FIELD D ATA AND GIS TECHNOLOGIES	Alekseenko Natalia

4 presentation with focus on collection management systems

1) From 'Polar-Alpine Botanical Garden – Institute Kola SC RAS'
2) From 'Matrosov Institute for System Dynamics and Control Theory Siberian Institute of Plant Physiology and Biochemistry '
3) From 'Yugra state univesity, Khanty-Masiysk'
4) From 'Komarov Botanical Institute of the RAS , Yugra State University and Kazan Federal University '

Komarov Botanical Institute, located in S:t Petersburg

Link: Tripadvisor → Vladimir Komarov Botanical Institute Museum
https://en.wikipedia.org/wiki/Vladimir_Leontyevich_Komarov

'Polar-Alpine Botanical Garden – Institute Kola SC RAS'

Presentation

→ 'Possibilites of the Cryptogamic Russian Information System ('CRIS')'

→ 'CRIS as a working model of the interregional information system for cryptogamic botanists '

3 principles highlighted by Melechin

1) Ideology (Copyleft, KISS, "The function determines the form", et al.)
2) Software → (Linux, PostgreSQL, **Drupal**). Or not Drupal
3) Data Formats

CRIS (http://kpabg.ru/cris)

- CRIS → Cryptogamic Russian Information System
  - CYANOpro → http://kpabg.ru/cyanopro/
  - Fungi → http://kpabg.ru/f/
  - Lichens → http://kpabg.ru/l/
  - Hepatics → http://kpabg.ru/h/
  - Mosses → http://kpabg.ru/h/

'Matrosov Institute for System Dynamics and Control Theory

Siberian Institute of Plant Physiology and Biochemistry'

(Irkutsk)

Presentation

→**'**Cloud enviroment for Scientific Researchers'

Presentation

→ **'**Development of the information-analytical system on phytodiversity of Baikal Siberia**'**

Tech stack → NodeJS + jQuery, postgreSQL, Mapserver ..

Links → **http://biodiv.isc.irk.ru/ ,** **http://geos.icc.ru/**

'Yugra state univesity, Khanty-Masiysk'

(Khanty-Mansiysk)

Presentation

→'Fungarium of Yugra State University and its Collection Database'

Hold about 4.500 thousand specimens (3 type specimen)

Specify 6 and Specify 7

Implementing Specify 7, highlighting → 'loans, gifts, stats, printing invoices & labels' + Specify+GIS (GoogleEarth, Worldwind+Lifemapper) AND ' Attachments: 4000 macro- and about 3000 micro-photographs, 70 pictures of habitats, about 100 graphical drawings of microstructures, about 350 measurements files and about 20 pdf of publications'

Links → **https://fungariumysu.org/**

Presentation with focus on Collection Manager (Khanty-Mansiysk)

Who ? (3) 'Yugra state univesity, Khanty-Masiysk'

Future plans:

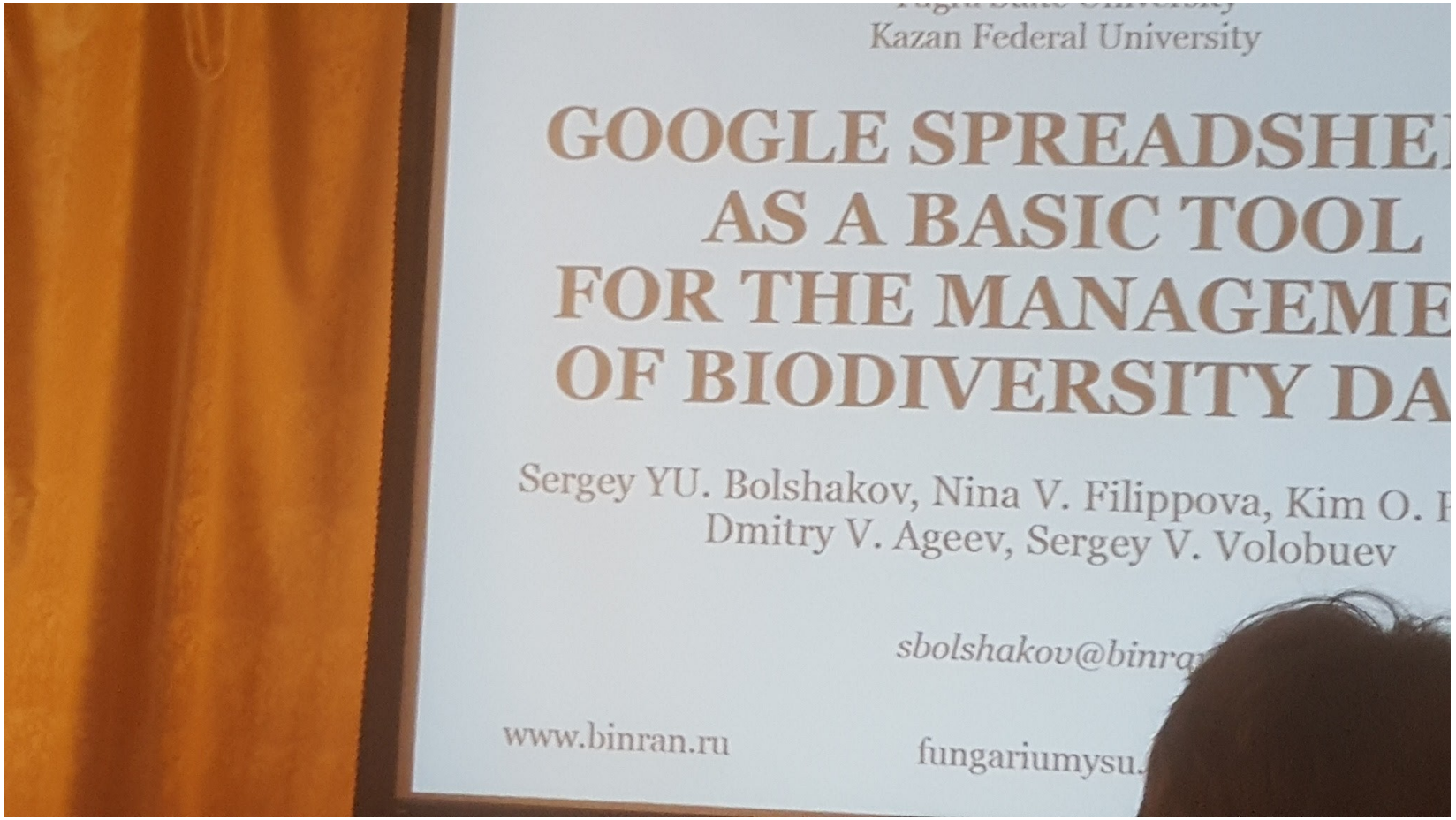
• **Development** of the taxonomical tree (currently manual) based on the Index Fungorum database;

• **Improvement** of an online interface of database in Specify 7 for guest users;

• **Improvement** of an image storage/browsing system, pictures processing;
• **Connection** to MyCoPortal for import of data from the YSU Fungarium database to the global database and training/collaboration.

Development of UGRABIO DB?..

Google Spreadsheets as a basic tool for the management of biodiversity data



'Komarov Botanical Institute of the RAS , Yugra State University and Kazan Federal University'
(S:t Petersburg)

Presentation

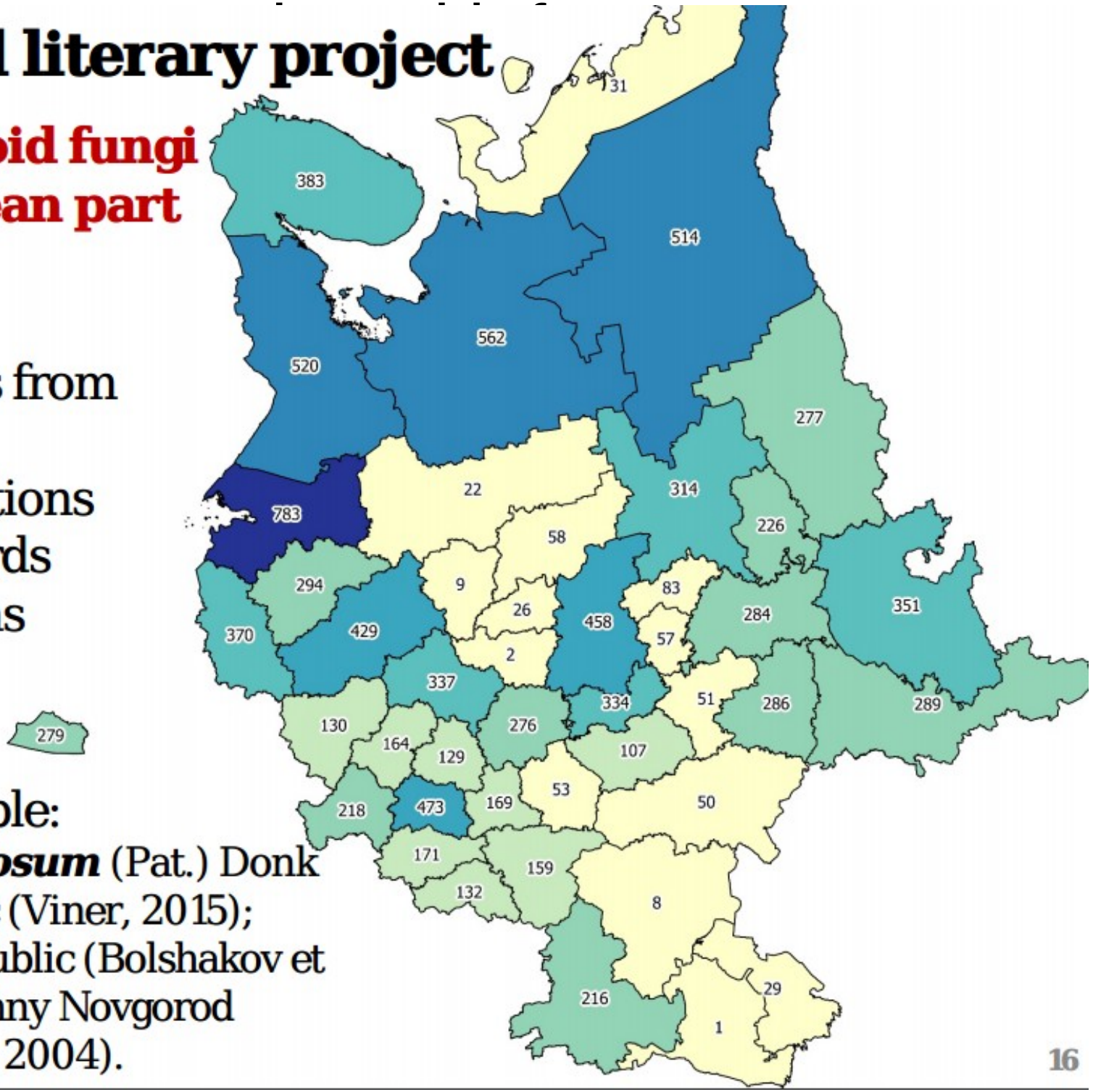
→ '**Google Spreadsheet** as a basic tool for the Management of Biodiversity Data'

Notes : Presenterar en översikt över internationella projekt och ryska projekt
JACQ, herbarium.univie.ac.at/database/
Biocase http://www.biocase.org/ AND **Specify** : specifyx.specifysoftware.org AND **BIOTA** viceroy.colorado.edu/Biota/
med flera …..

Completed literary project

Aphyllophoroid fungi of the European part of Russia

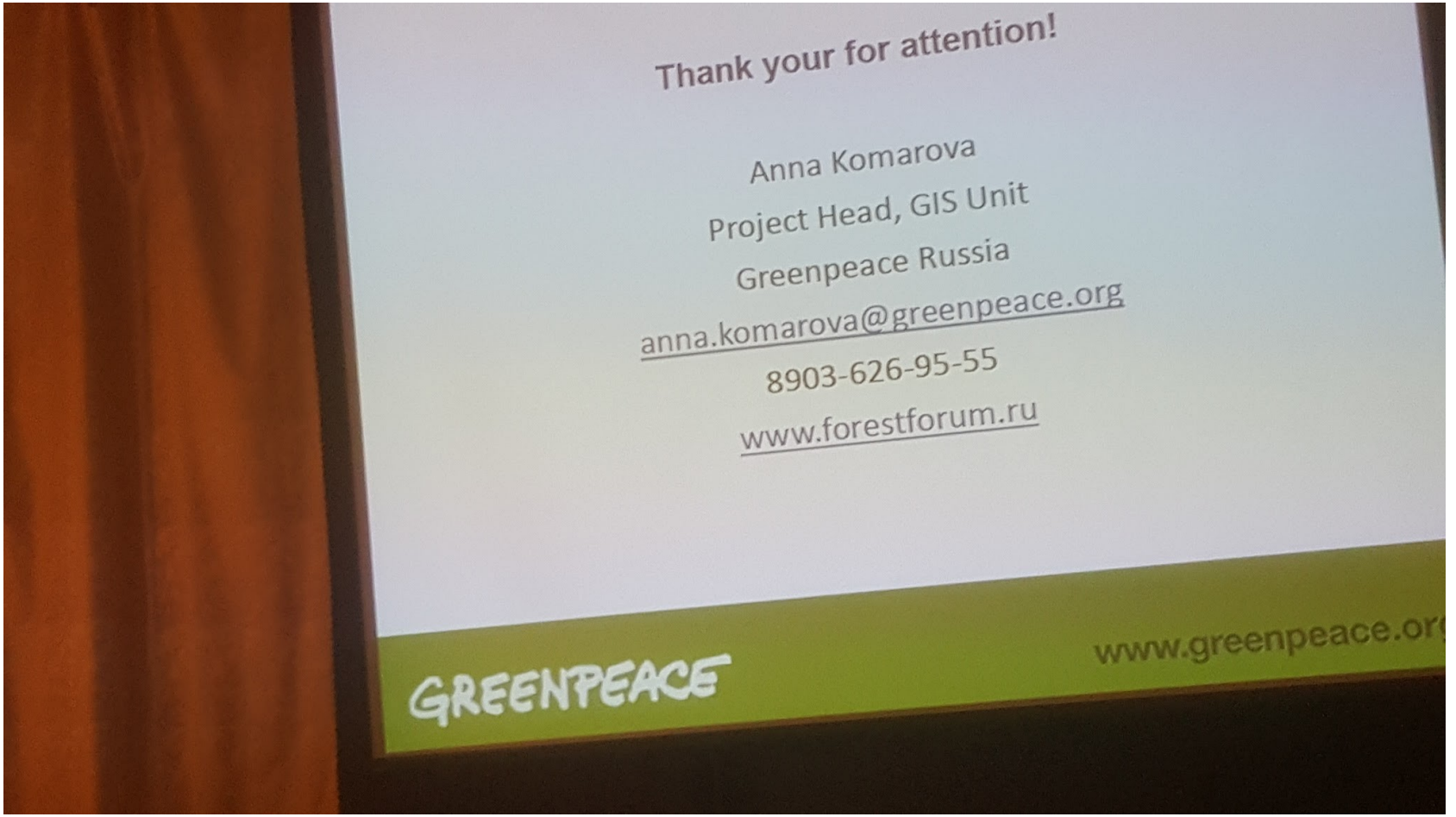
- 1106 species from 344 genera
- 495 publications
- 36300 records
- all 45 regions



Checklist example:

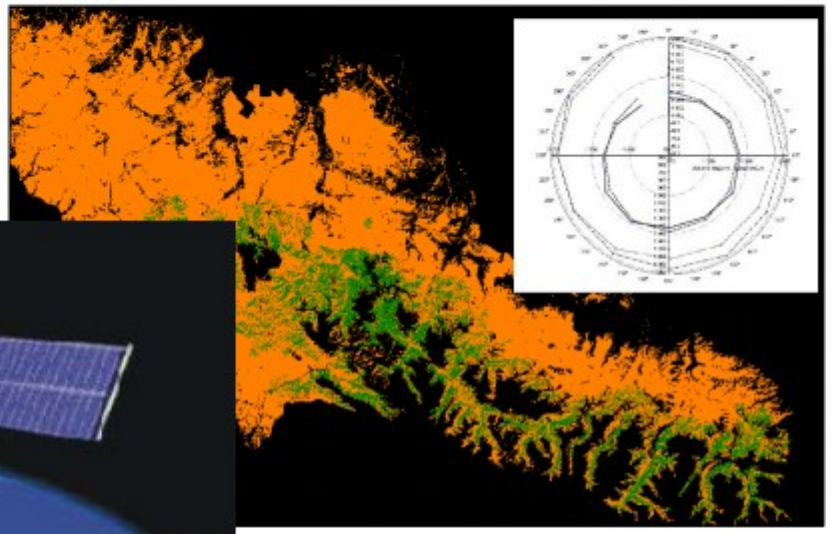
Xenasma pruinosum (Pat.) Donk
Komi Republic (Viner, 2015); Mordovia Republic (Bolshakov et al., 2016); Nizhny Novgorod Oblast (Spirin, 2004).

Anna Komarova



Открытые дистанционные данные в изучении темнохвойных лесов Северо-Западного Кавказа

Open source remote sensing data for North-West Caucasian fir forest investigation



Анна Комарова[1,3],
Наталья Алаторцева[2],
Александр Зудкин[1,4], *Евгений Альтшулер*[3]
[1]*Гринпис России*, [2]*НП «Прозрачный мир»*
[3]*Биологический ф-т МГУ им.М.В.Ломоносова*
[4]*Университет шт. Мэрилэнд, Колледж Парк, США*

GREENPEACE

www.greenpeace.org

Apatity, The Kola Science center

the Kola Science center, location 'Fersman str. 14'

Alexander Evgenievich Fersman (1883-1945)

“was a prominent Soviet Russian geochemist and mineralogist, and Academician of the Soviet Academy of Sciences (1919).”

“Earlier, in 1930, **Fersman founded the Kola Science Centre** as the Khibiny Alpine Station of the USSR Academy of Sciences. Fersman was its director for the next 15 years. Now called the **Kola Science Centre** of the Russian Academy of Science, it comprises **10 resesearch institutes**, with headquarters in Apatity. “

Fersman Mineralogical Museum

“is one of the largest mineral museums of the world, located in **Moscow**, Russia. Its collections include more than 135,000 items”

Article about Fersman :

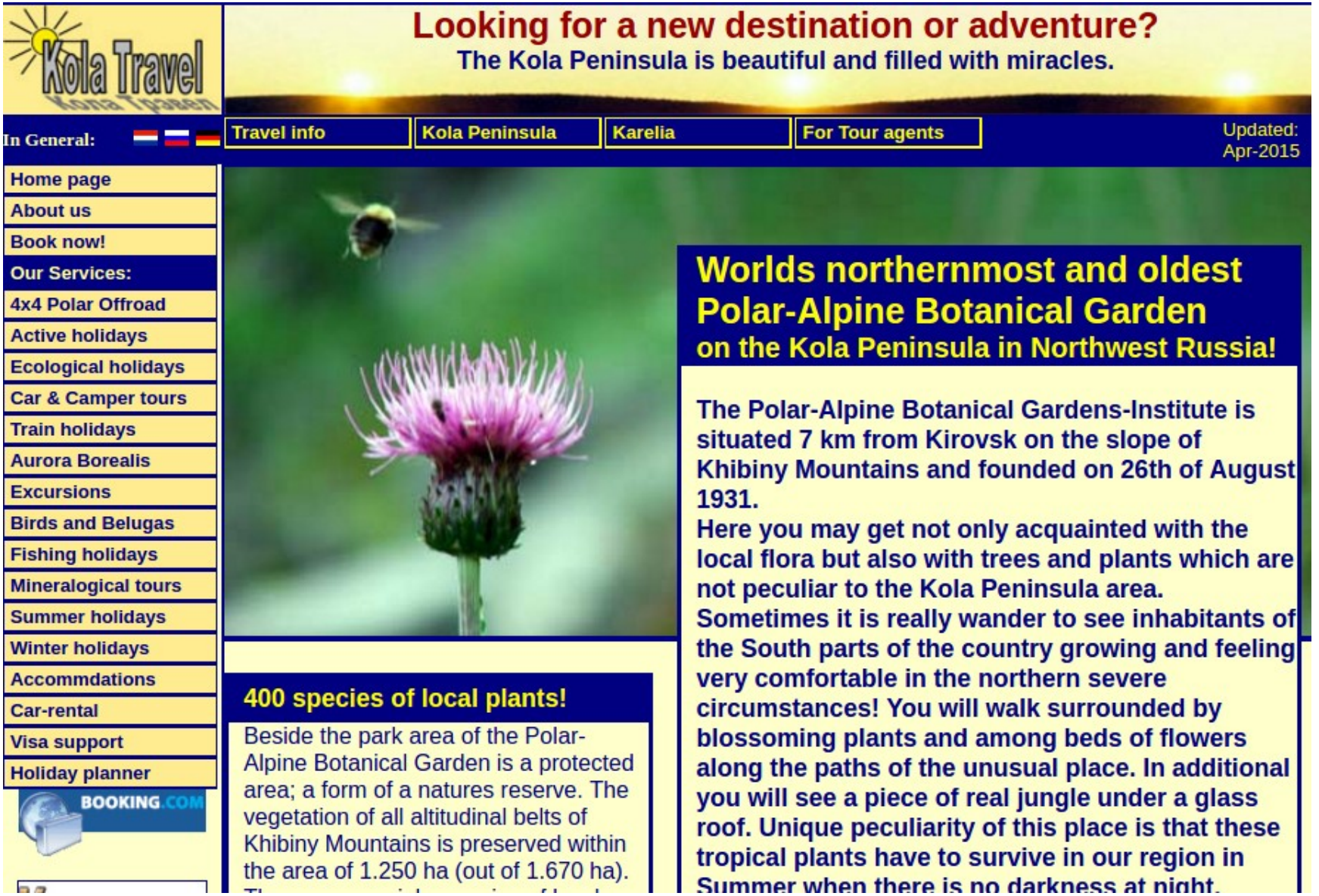
https://www.geolsoc.org.uk/Geoscientist/Archive/July-2008/Fersman-and-the-Kola-Peninsula

The Excursion I missed

http://snowderevnya.ru/

The 'Polar-Alpine Botanical Garden'

http://www.kolatravel.com/botanical_garden.htm



Polar-Alpine Botanical Garden

Main Address:

Polar-Alpine Botanical Garden Institute

Kola Science Centre of RAS
Fersman str., 18A

Apatity

Murmansk region 184209

Russian Federation

http://www.pabgi.ru/
http://www.bgci.org/garden.php?id=130

Few links

- http://www.kolatravel.com/apatity.htm
- http://www.kolatravel.com/hiking_holidays.htm
- **National** parks of Russia
  - https://en.wikipedia.org/wiki/National_parks_of_Russia
- **Vodlozersky** National Park :
  - https://en.wikipedia.org/wiki/Vodlozersky_National_Park
  - “The park area includes Lake Vodlozero, the river basin of the Ileksa, the main inflow of the lake, and the upper course of the Vodla. In 2001, Vodlozersky was designate a UNESCO Biodiversity Reserve site “

Hiking tours overview

Hiking in Khibiny- and Monche Tundra

Guided hiking tour for backpackers (15 days) through the bleak Khibiny Mountains and green Monche Tundra.

Hiking in Khibiny- and Lovozero Tundra

Combined guided hiking tour for backpackers (13 days) through stern Khibiny Mountains and Magic Lovozero Tundra.

Hiking in Monche Tundra (7 days)

Backpack with guide through Monche Tundra; virgin forests, magnificent mountains, desolate tundra, majestic waterfalls and crystal-clear rivers and lakes.

Hiking in Khibiny Tundra (6 days)

Short guided backpacking tour in Khibiny Mountains - the highest tundra of Lapland.

Hiking in Khibiny Tundra (8 days)

Long guided backpacking tour in Khibiny Mountains. Get in touch with its summits, passes and ravines.

Hiking in Lovozero Tundra (5 days)

Guided backpacking adventure to the mystic centre of Lovozero Tundra.

Bilder

https://nrmowncloud.nrm.se/owncloud/index.php/apps/files/?dir=%2FNRM-conference%2Fmurmansk%2Fbilder